The regressions showed that broadcasting on a UHF channel decreased the programs ratings for each day and half hour studied. The range of ratings decreases were from four ratings points in Wednesdays two half hours to one rating point in the second half hour of Monday. Overall the UHF handicap averaged over *two* ratings points.

An additional analysis of non-network programming on VHF and UHF stations yielded similar results. In 1995, ALTV examined the ratings of stations in the top 100 markets for all first run, off-network and off-fox programs broadcast during the early fringe and access periods.[29] Using 1993 Arbitron ratings data, we examined the ratings of 494 network affiliates and general audience independents in these markets. Controlling for identical programming, the ratings for UHF stations during these periods were significantly below their VHF counterparts across all programming categories. The results are summarized below

Table 2.
UHF vs. VHF Ratings Differences
Early Fringe & Access Periods
By Program Type for 1993 Season

Program Type	Average VHF Rating	Average UHF Rating	UHF vs. VHF Rating Differential
First run	11.6	7.2	- 37.8%
Off-network	7.8	4.8	-38.7%
Off- Fox (network)	7.8	5.5	-29%%

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Additional data have been submitted in the FCC's local television ownership proceding. The following highlights just a few of the studies documenting a UHF handicap.

[29]See. Comments of the Association of Independent Television Stations, Inc in MM Docket No. 94-123 (March 7, 1995) Vol. 2 at Exhibit 2. Relevant portions of the study are attached as Exhibit B.

Consider, for example, the declines in audience share for those networks that shifted affiliations from VHF to UHF facilities. In every instance the networks switching to UHF facilities lost audience share. The results of this analysis are summarized in Table 3 below.

Table 3.
NETWORK AFFILIATION SWITCHES - THE UHF DISADVANTAGES

		BEFORE		*AFTER*		
MARKET	**NETWORK**	**Channel**	**Rating**	**Channel**	**Rating**	**% DIFFERENCE**
Atlanta	CBS	5	22.3	46	9.0	-60%%
Austin	CBS	7	30.7	42	15.7	-49%
Birmingham	ABC	6	26.0	33	11.0	-58%
Cleveland	CBS	8	19.7	19	9.3	-53%
Detroit	CBS	2	19.2	62	7.7	-60%
Flint	NBC	5	25.0	25	12.0	-52%
Green Bay	NBC	11	18.7	26	13.0	-30%
Greensboro	ABC	8	18.7	45	9.3	-50%
Kansas City	NBC	4	16.3	41	10.7	-34%
Memphis	ABC	13	15.3	24	8.0	-48%
Milwaukee	CBS	6	21.7	58	6.0	-72%
Mobile	NBC	10	19.0	15	11.0	-42%
New Orleans	ABC	8	12.0	26	8.0	-33%
Phoenix	ABC	3	16.7	15	11.0	-34%
St. Louis	ABC	2	14.7	30	9.0	-39%
Tampa Bay	ABC	10	15.7	28	9.3	-41%

AVERAGE = 47%

***source: Neilsen 1994, 1995, and 1996*
Monday-Sunday 9AM-12 Midnight household share

The reverse is also true. Networks switching to VHF outlets improve performance. Fox's decision several years ago to shift affiliations from UHF to VHF facilities was specifically designed to increase audience reach, ratings and economic performance. At the time, leading analysts noted the dramatic improvement associated with moving from UHF to VHF stations:

> Moreover, most of the available UHF stations, which have a lower reach and lower audience potential than VHF stations - a problem faced by Fox in a number of markets. The importance of VHF stations was dramatically illustrated when News Corporations (Fox's parent company) invested $500 million for a minority nonvoting interest in New World Communications, the owner of a number of VHF affiliates in large markets. In return, New World Communications agreed to switch the network affiliations of 12 stations to Fox, thereby giving Fox a stronger signal, and a stronger station in a number of key markets. Thus despite the presence of cable, a strong roster of VHF stations remains vitally important for a broadcast network.[30]

Fox itself stated that the affiliate switches improved it ratings by 25%. These changes illustrate dramatically the differences between UHF stations because they involve exactly the same programming, in the same markets broadcast at the same time. The only change is that the Fox programming is now on a VHF affiliate.

Regardless of the network, VHF stations always out perform their UHF counterparts. Data submitted by Malrite in MM Docket No. 91-221 confirms this fact. In 29 of the top 33 markets where a network UHF affiliate competes with a network VHF affiliated, the UHF station is always the lowest rated. The same is true for independent stations. In 19 markets where a

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[30]Veronis, Suhler & Associates, *Communications Industry Forecast 1995-1998* at 84.

VHF independent competes against a UHF independent, the UHF station is always the lower rated facility.[31]

Economic Performance Studies

There is no doubt that the UHF ratings and coverage disadvantage has had a dramatic affect on the profitability and economic viability of UHF facilities. The UHF disadvantage continues to exist, despite the growth of cable television.

In 1995 we submitted data to the Commission which analyzed the financial health of an UHF affiliated stations from 1982 through 1992. These data compared the profits (as a percentage of total revenues) of UHF affiliated stations to *all* affiliated stations. The result was that the gap between UHF affiliates and all other affiliates grew throughout the 1980's, clearly documenting the UHF handicap over the long term.[32]

The data demonstrate two important facts. First, if the growth of cable eliminated the difference between UHF and VHF stations, one would have expected the gap to narrow over time. It did not. To the contrary, the disparity increased. Of particular importance is the fact that the gap increased form 1982 through 1985, a time period when the FCC's must-carry rules were in effect. Most if not all UHF affiliates were carried during this period. The gap continued to widen through the early 1990s.

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[31]See attached Exhibit C. Submitted as exhibits in Comments filed by Malrite Communications Group in MM Docket No. 91-221 and 87-8, May 17, 1995 (exhibits 2 & 3).

[32]*See* Clifton, James et al. *Economic Report, The Economic Effects of Repealing the Prime Time Access Rule, submitted* in MM Docket No. 94-123, March 1995. The relevant portion of the study is attached hereto as Exhibit D.

Second, programming was not responsible for the differences in profitability. Since the data base compared UHF affiliates to all affiliates, then the same programming was broadcast during key time periods, i.e. prime time was seen in all markets.

Third, the data likely underestimate the profitability gap between UHF and VHF stations. Remember the comparison was made between UHF affiliated stations and *"all"* affiliated. The "all" affiliated station category includes both VHF and UHF stations. Including both numbers would tend to reduce the differences between the two categories.[33]

In summary, cable did not decrease the economic gap between UHF stations and VHF stations. One reason for this fact is that while UHF signal quality may be improved somewhat by cable carriage, this is more than offset by the additional cable channels that are added when a home changes from a broadcast delivery system to a cable delivery system. Also, UHF stations have suffered historically from disadvantageous channel positioning on cable systems. Finally, each cable channel reduces at the margin the shares and ratings of UHF television stations. Thus the audience reach in terms of viewing is actually smaller on cable systems.

The conclusions presented above were recently confirmed by an analysis conducted by NAB. NAB compared the performance of UHF affiliates versus their VHF counterparts. The data confirm a noticeable disadvantage, with the average UHF affiliate generating less than 50%

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[33]The data set was based on data prepared by NAB and published in its annual Television Financial Reports from 1976 to 1992. Unfortunately, the affiliate data are not categorized by UHF vs. VHF status. Rather the data set lists UHF affiliates and "all" affiliates. As explained above, however, such categorization underestimates the true disparity between UHF and VHF facilities.

of the average VHF revenues, just about one third of the cash flow and less than a quarter of pre-tax profits.[34]

There can be little doubt that the UHF disadvantage recognized by the FCC in its national ownership rules remains today. In this regard, it is important to recognize that all of the ratings evidence presented above occurred at a time when cable systems had significantly penetrated every market. Moreover, the must-carry rules were in place at the time. Thus, despite carriage of UHF stations, a significant market disadvantage for UHF stations remains.

C. Eliminating the UHF Discount will Harm the Development of New Networks

At the time the FCC first liberalized the seven station rule, it hoped that relaxation of the national ownership rule would spur the development new competitive *ad hoc* networks.[35] On this point relaxation of the rule has been an unqualified success. The efficiencies have not only led to additional program growth in the "*ad hoc* network" syndication market, but also the development of new emerging networks that compete with the "big three."

It is worth considering what would happen if the FCC eliminated the present UHF discount policy. By statute, an entity is permitted to own television stations that reach up to 35% of the national audience. As noted above, this limit assumes the UHF discount remains in effect. Assuming the 35 percent limit remains in place, eliminating the UHF discount will cause

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[34]Fratrik, Mark, *A Financial Analysis of the UHF Handicap*, July 1998. Filed with NAB Comments in Docket 98-35, July 21 1998.

[35]*Report & Order* in MM Docket 83-1009, 100 FCC 2d 17, 45 (1984)

irreparable harm and reduce competition to the big three networks. The following chart illustrates the problem:

Table 4.
Selected Television Station Ownership
By Audience Reach

Owner	Reach with UHF Discount	Reach Without UHF Discount
Fox Television Stations, Inc.	34.9%	40.5%
Paxon Communications Corp.	30.9%	61.4%
Tribune Broadcasting	26.5%	37.5%
USA Broadcasting Inc.	15.5%	31%

Source: *Broadcasting & Cable*, April 6, 1998 at 46 - 68.

Since the late 1980's the primary source of competition for the big three networks has been Fox. The Fox network, including its owned and operated stations, still relies heavily on UHF facilities. After creating the competition that was envisioned in 1985, it would be ironic for the FCC to now force Fox to divest itself of several facilities by eliminating the UHF discount.

This August (1998), Paxon Communications Corp., is scheduled to launch Pax Net the seventh free, over-the- air television network. Devoted to family values, the network promises to provide additional competition to the national networks and local stations throughout the country. Pax Net's business plan does not involve your typical network/affiliate relationships. In order to survive as the new entrant, Pax Net has expanded the reach of the network through actual ownership of the facilities. The efficiencies of this "ownership based" approach are critical to launching the network. As most broadcast economists recognize, to compete at the national network level a broadcast network must have nation-wide reach. Eliminating the UHF discount (and retaining the 35% cap) would force Pax Net to divest itself of nearly half its stations, thereby destroying the chances for this new network. The result would be less competition to the existing broadcast networks.

A similar concern applies to the new WB network. Tribune is a key component in the roll out of that network, providing the WB with strong affiliates in key markets. Eliminating the UHF discount would force Tribune to divest itself of stations in key markets, which in turn could jeopardize the competitive posture of the WB network.

The most recent player on the national broadcast scene is USA Broadcasting. This group is in the process of shifting from a "home shopping" format to general audience entertainment. Such a shift is extremely expensive and risky. At the national level, the group must purchase programming in a highly competitive national program distribution market. Group ownership increases the chances for these stations to acquire high quality syndicated programs. In addition, USA Broadcasting plans to have a uniquely local focus, producing programs in each local market. While eliminating the UHF discount would not require USA Broadcasting to immediately divest itself of properties, it would put constraints on future expansion. Such a result would not promote competition.

II. The Television Newspaper Cross-ownership Rule Should Be Eliminated

In 1975 the Commission enacted a "prospective" ban on newspaper television cross-ownership combinations and forced the divestiture in 16 "egregious" cases.[36] This decision was made despite the findings that "there is no basis in fact or law for finding newspaper owners unqualified as a group for future broadcast ownership."[37] To the contrary the Commission praised newspapers for helping to accelerate the development of the broadcast service.

The FCC's decision was based on the competitive landscape as it existed in 1975. At that time, broadcasting was the province of three dominant national television networks which garnered over 90 percent of the audience, with little viewing on independent stations or cable channels.[38] There were no alternatives to the big three networks, cable was in its nascent stage, DBS was unknown and the possibility of a fourth network an unrealized dream.

Significantly, the Commission found that newspaper-broadcast combinations provided superior locally-oriented service. Despite this finding, the FCC enacted the rule in the hope of gaining additional diversity.[39] The justification was that "51 voices are necessarily better than

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[36]*Multiple Ownership Report*, 50 FCC Rcd at 1074 (1975).

[37]*Id.* At 1075.

[38]*See* F. Setzer and J. Levy, *Broadcast Television in a Multichannel Marketplace*, Office of Plans and Policy Working papers No. 26, 6 FCC Rcd 3996, 4000, 4018-19 (1991) hereinafter "*OPP Report*")

[39]*Multiple Ownership Report* at 1075, 1078.

50."[40] While the Supreme Court sustained the rule on the grounds that it "would possibly result in enhanced diversity of viewpoints," this is no longer the case today.[41]

There is no doubt that the communications landscape has changed dramatically since 1975. The number of licensed radio stations has increased from 8,265 to 12,135 -- a 50 percent increase.[42] Today, radio broadcasts approximately 91distinct formats.

Television stations have increased as well. In 1975 there were only 953 stations compared to 1,569 today.[43] In 1975 there were three networks, ABC, NBC and CBS. Today a fourth network, Fox, has emerged as a strong competitor. Three additional networks, UPN, WB and Pax Net, are emerging in the marketplace.

The cable industry has exploded passing 97 percent of U.S. television households. In 1975 there were 3,506 systems serving 9.8 million subscribers. Today, the number of systems has nearly tripled to 10,845 and the number of subscriber has increased to 64.1 million.[44] Over 96 percent of cable subscribers have access to 30 or more channels.[45] There are hundreds of cable networks providing information and entertainment on countless subjects. As a direct result of

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[40]*Id.* at 1059.

[41]*FCC vs. NCCB*, 436 U.S. 775, 783 (1978)

[42]*See Newspaper/Radio Cross-ownership Waiver Policy, Notice of Inquiry,* 11 FCC Rcd. 13,003, 13,009 (1996) ("*Newspaper/Radio Notice*") citing *(Broadcasting & Cable Yearbook 1995* at B-655); *Broadcast Station Totals as of February 28, 1997*, FCC Mimeo No. 72712 (March 6, 1997).

[43]*1998 Broadcast and Cable Factbook*, Services Vol. 66 at I-45.

[44]*Id.* at I-96.

[45]*Id.* at I-97

this competition, the viewing share of local television stations, including the networks has declined.

Table 5
1996 Comparative Total Day Rating/ Shares

Station/Network Type	Rating	Share
Network Affiliates (ABC,CBS, NBC)	12.0	44.0
Fox Affiliates	4.1	10.0
Independent	3.5	12.0
Public Television (PBS)	1.0	3.0
Basic Cable	1.9	6.0
Pay Cable	10.3	34.0

Source: Bear Stearns: Cable & Broadcasting Industry, October 1997 at 91.

A cursory review of the above data reveal that the combined audience share of all cable channels is roughly equivalent to the combined audience share of the major networks. It also exceeds the combined audience share of Independent, PBS and Fox affiliates.

While, on an individual basis, the ratings and share of a local broadcast television stations still exceeds any individual cable network, the combined shares of 30 or 40 cable channels are equivalent to the combined shares of local television stations. In short, given the entire media landscape, local television/newspaper combinations cannot control the market place of ideas in their respective local television markets. The growth of cable has attenuated, if not eliminated, the need for the newspaper cross-ownership rule.

In addition to cable, new alternative media have emerged. Direct Broadcast Satellite may serve 13-15 million homes by the turn of the century.[46] Wireless cable systems serve over 1.1 million homes and SMATV systems serve 1.05 million homes.[47] Over 80 percent of U.S. homes now have a VCR. Satellie radio and digital television are just around the corner.

The print industry has also kept pace. While the number of daily newspaper has declined, overall circulation of U.S. daily newspapers has held relatively steady, and increased from 51.1 million to 60.8 million on Sundays.[48] Smaller, weekly publications have grown. In 1975, 7,612 weekly newspapers enjoyed an average circulation of 35.9 million per week. By 1996, the number of weeklies had risen to 7, 915, with a staggering leap in circulation to 81.6 million.[49]

Perhaps the most significant diversity enhancing development in recent years has been the growth and expansion of the Internet. This development could never have been envisioned in 1975. Every day, tens of millions of people sign on to the "net" either searching or dispensing information. Advertising on the "net" is just beginning, opening up a market worth billions of dollars. In 1996 approximately, 8.5 million Americans said that information obtained on the Internet influenced their vote.[50]

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[46]*Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming,* FCC, 96-496, at para. 39 (released Jan 2. 1997) (hereinafter "*Competition Report.*"

[47]*Id.*

[48]Newspaper Association of America, *Facts About Newspapers 1997*, 13 (1997)

[49]*Id* at 25.

[50]See Rajiv Chandrasekaran, *Politics Finding a Home on the Net; Post-Election Surveys Show the Web Gains Influence Among Voters*, Washington Post, November 22, 1996 at A4.

Given this tremendous growth in the information and media marketplace, maintaining the newspaper cross-ownership is no longer justified. The factual premise, *i.e.*, concern about diversity in local markets, no longer exists. The FCC is under an obligation to change its rules. Retaining a rule to address a problem that no longer exists is highly capricious.[51]

Indeed, the Commission's current regulatory posture defies logic. For example, in the contex of its local television ownership proceeding, the FCC tentatively concluded that only free over-the-air television stations should be counted at contributing to diversity for the purposes of the local television ownership rules. In that proceeding the FCC observed that newspapers may not be considered as diversity substitutes for local television stations:

> Although neither radio nor newspapers should be disregarded as competing media for television, we nevertheless, cannot consider each radio station, or each newspaper as being the equivalent of a broadcast television station for diversity purposes.[52]

The Commission explained why newspapers were not diversity substitutes for television.

> Television is: 1) more immediate than newspapers; 2) has public service obligations not shared by newspapers; 3) has more visual impact than either radio or newspapers and, 4) is used by more people as their primary news source than radio or newspapers. .... Also, while each television station, and for that matter radio station, has a legal obligation to address issues facing its local community local daily newspapers do not.[53]

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[51]*See Home Box Office, Inc. vs. FCC*, 567 F.2d 9, 36 (D.C. Cir. 1977)

[52]*Further Notice of Proposed Rule Making, Review of the Commission's Regulations Governing Television Broadcasting*, MM Docket No. 91-221, FCC 94-322 (January 17, 1995) at para. 74

[53]*Id.*

The FCC concludes its analysis by stating that *newspapers are not fungible with television stations for diversity purposes* on a one for one basis.[54] As a result, they are not counted as a local diversity voice for the purposes of diversity analysis in the context of the local television duopoly rule.

If newspapers are not fungible with local television stations for diversity purposes, then there is no justification for a rule prohibiting the cross-ownership of the two mediums. As the FCC itself noted:

> Additionally, our newspaper-broadcast cross-ownership rule (citation omitted) must be viewed as accepting that newspapers are in some measure substitutable for broadcast media for diversity purposes. Prohibition of newspaper and television, and radio and television cross ownership in the same market would make little sense unless these different media were *important* substitutes for each other.[55]

The FCC cannot have it both ways. If newspapers are not fungible diversity substitutes for local television stations, then, according to the FCC, the current newspaper rules make no sense. As the FCC noted, they must be *important* substitutes. Alternatively, if newspapers are substitutes, then the FCC should count them as a source of information when revising its local television ownership rules. You can't find that newspapers are not substitutes to television stations in one proceeding and continue to maintain a cross-ownership rule in another.

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[54] *Id.*

[55] *Further Notice of Proposed Rule Making, Review of the Commission's Regulations Governing Television Broadcasting*, MM Docket No. 91-221, FCC 94-322 (January 17, 1995) at para. 69 *citing Report and Order* in Gen Docket No. 83-1009, 100 FCC 2d 17, 25-26 (1984)

On this point the FCC seems to argue that while there is no *one for one* substitution between television stations and newspapers, there is enough of a nexus in the *aggregate* to justify continuation of the newspaper-television cross ownership rule. The Commission attempts to waffle further claiming that:

> While we believe that these media may be substitutes as informational sources, we do not find them substitutes for every purpose.[56]

Frankly, this little piece of "metaphysics" makes no sense. There is no analysis behind the statement. The FCC is really saying is that it will consider newspapers and television stations to be "diversity substitutes" when it wants to regulate these combinations. In other contexts, when considering them as "diversity substitutes" may justify relaxation of other rules, it won't consider them to be diversity substitutes. Orwell would be proud!

ALTV believes that the only consistent approach is to conclude that the market for diversity encompasses newspapers, broadcast television, radio, cable television, DBS, SMATV, magazines, weekly newspapers and the Internet. Given these plethora of substitutable voices, there FCC's concerns over diversity in local markets can no longer be justified.

There is no doubt that newspaper-television cross-ownership combinations would benefit the public interest. Indeed, even in 1975 the FCC conceded that newpaper owned facilities were providing superior public service.. The same is true today.

A recent example demonstrates the point. In 1995 the FCC granted a permanent waiver to Rupert Murdoch's News Corporation Limited. The waiver permitted Murdoch to own

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[56] *Id.* at para 69 n.102

WNYW (TV) New York and reacquire the *New York Post*.[57] In that decision the FCC found that Murdoch's reacquisition of the *Post* might be pivotal to the newspaper's survival, and that the waiver would accommodate the policies underlying the federal bankruptcy laws.[58] Indeed, it has been argued that enforcement of the newspaper-broadcast cross ownership rule decreased diversity by hurting the profitably of local daily newspapers. The result being less, not more diversity.[59]

In summary, the current newspaper television cross ownership rule can no longer be justified. The marketplace and diversity assumptions upon which it is based, no longer exist. The rule should be eliminated.

III. Cable Television Cross Ownership Rule Should Be Retained

ALTV has long favored retention of this rule. We do so not because of a need to promote additional, diverse voices in local markets. As we observed in this and other proceedings, there are a plethora of voices in local television market. Our concerns are based on the anti-competitive potential associated with a pipeline cable service.

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[57] *Fox Television Stations, Inc.* 8 FCC Rcd. 5341 (1993), *affd sub nom. Metropolitan Council of NAACP Branches vs. FCC*, 46 F.3d 1154 (D.C. Cir 1995)

[58] *Id.* at 5350

[59] Additional evidence supporting relaxation of the newspaper-broadcast ownership restriction has been submitted in the comments filed by the National Association of Broadcasters. ALTV supports the results found therein.

As the *Notice* explains, the statutory prohibition was eliminated by the 1996 Telecommunications Act. Nevertheless, the Act did not limit the FCC's authority to retain the rule[60]

ALTV's concern with this rule has always been linked to cable's status as a monopoly pipeline to the home. To be sure, cable systems and local television stations compete for local advertising revenue. As a result, cable, as the controller of the pipeline, has the both the incentive and the ability to discriminate against local television stations with respect to carriage and channel positioning . These incentives would increase exponentially, however, if the owner of another television station in the same market became the owner of the local cable system. In this regard, potential anti-competitive behavior would not only inure to the benefit of the local cable operator, but also to the commonly owned television station in the market.

The current analog must-carry rules solve some, but not all of the problem. While commonly owned cable/broadcast combinations may not drop or reposition a competitor, it would remain free to use the waiver process to delete stations from the carriage requirements. In addition, a commonly owned cable/broadcast combination in local markets could create unfair leverage when it comes to retransmission consent negotiations. In this respect, the commonly owned television station would have an unfair advantage negotiating with its "sister" cable division.

[60]*Notice* at para 45.

The most important, concern, however, is digital must-carry. To date the FCC has not decided the nature and the scope of these rules.[61] While we are hopeful the FCC will enact these rules, eliminating the cable/broadcast cross-ownership rules now could have terrible ramifications. There is no doubt that local televisions stations exist in a highly competitive marketplace. This will apply to local digital television as well. One way to gain a competitive advantage would be to deny carriage, or at least provide discriminatory treatment, to a competitive local digital television station. Such behavior could delay a competitor's digital roll out, giving the commonly owned broadcast/cable competitor a first mover advantage.

Thus, until the FCC decides the digital must-carry issue, we urge retention of the cable/broadcast cross ownership rule.

Respectfully Submitted

ASSOCIATION OF LOCAL TELEVISION STATIONS, INC.

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July 21, 1998

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[61] *See Notice of Proposed Rule Making* in CS Docket No. 98-120, FCC 98-153, (released July 10, 1998).

Exhibit A

Before the

Federal Communications Commission

Washington, D.C.

In re	)	
	)	
Review of the Prime Time	)	MM Docket No. 94-123
Access Rule, Section 73.658(k) of the	)	
Commission's Rules	)	

Economic Report

The Economic Effects of Repealing the Prime Time Access Rule: Impact on Broadcasting Markets and the Syndicated Program Market

Prepared for :
Association of Independent Television Stations, Inc.
King World Productions, Inc.
Viacom Inc.

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March 7, 1995

D. A Significant UHF vs. VHF Gap Remains For the Same Programs Shown at the Same Time on the Fox Network.

In this section, we test empirically whether the UHF handicap, defined in terms of ratings, still persists. One can hypothesize that an individual program's rating is determined by a number of factors: the program itself, its time slot, day of the week, tastes of the viewers, the channel (UHF or VHF) the program is on, as well as other factors. To determine the relationship between ratings and whether a channel is UHF or VHF, one would like to compare a program's ratings on a UHF channel against its ratings on a VHF channel in the same market.

Unfortunately, this experiment is not possible. But a regression that holds the appropriate other factors constant accomplishes the same thing. By matching programs and time slots and the relevant factors other than channel, we can examine the effect of the UHF-VHF difference on a program's ratings.

Our empirical test of the UHF ratings handicap is based on the ratings of the same Fox program in the same time slot across cities for 1993 taken from the Arbitron database. This data allow us to compare the same program on the same day in the same time slot across markets where the program is shown on UHF channels and VHF channels. Differences in other factors, such as income, and city size, are taken into account, so a UHF vs. VHF comparison can be made. Fox affiliates are a mix of UHF and VHF stations so a UHF vs. VHF test can be done.

Among the Fox stations in the top 75 ranked cities[26] in 1993, we selected matched programs in the 8:00-8:30 and 8:30-9:00 time periods for the Eastern and Pacific time zones and 7:00-7:30 and 7:30-8:00 time periods in the Central and Mountain time zones for Monday through Friday. On Monday, Wednesday, and Friday all Fox stations air a one hour program during this period. On Tuesday and Thursday, there are two half-hour shows. The programs are listed in **Table III.2** below.

The rating in each of these time periods in each of the top 75 ranked cities for the Fox programs is determined by a number of factors. Competing stations in each city will influence Fox's rating with more competing stations tending to lower Fox's rating. The size of the city, as measured by Arbitron television households also might affect ratings, because we see more station specialization by program type in larger markets. Cable penetration is another explanatory factor. Since cable offers more channels, higher cable penetration might lead to a lower Fox rating. However, if Fox is on a UHF channel, higher cable penetration might lead to a higher Fox rating due to better reception. Two final possible explanatory factors are the ethnic composition of each city and regional tastes.

[26] Actually, only 74 markets are used in the analysis. Lexington, KY is omitted because it does not have a Fox station.

Table III.2: Prime Time Programs Shown on UHF and VHF Fox Stations		
	First Half Hour	Second Half Hour
Monday	Fox Night at Movies	Fox Night at Movies
Tuesday	Roc	Bakersfield PD
Wednesday	Beverly Hills 90210	Beverly Hills 90210
Thursday	The Simpsons	Sinbad Show
Friday	Adv Brsco Jr.	Adv Brsco Jr.

The Fox program's Arbitron rating for each of the ten half hour periods is explained, using regression analysis, by:

- Fox station on a UHF or VHF channel;
- The number of non-Fox commercial UHF channels;
- The number of non-Fox commercial VHF channels;
- Thousands of television households as measured by Arbitron;
- Cable penetration as measured by Arbitron; and
- Ethnic composition of the population from the 1990 Census as measured by the shares of the city population which is black and Hispanic.

A detailed discussion of the regression methodology and results is presented in **Appendix C**.

The regressions show that broadcasting on a UHF channel decreases the program's ratings for each day and half hour studied (see **Table III.3** below). The range of ratings decreases are from four ratings points in Wednesday's two half hours to one rating point in the second half hour of Monday.

Table III.3: UHF Ratings Disadvantages

	First Half Hour	Second Half Hour
Monday	1.38	1.09
Tuesday	1.32	1.34
Wednesday	3.89	4.05
Thursday	2.21	1.20
Friday	2.15	1.99
Average Monday Through Friday	2.06	

C. DETAILS OF THE DATA BASE CONSTRUCTION

1. Arbitron data

The Arbitron reports were obtained from the historical depository for Arbitron data at the University of Georgia at Athens. The data exist in hard copy format only at the University, and were entered into computer by hand. The Arbitron reports used are those for November of each year (the same time period relied on by the FCC for delineating each year which 50 markets are subject to PTAR). The November Arbitron reports show the average program ratings and shares over the four weeks of November. The years included in the data base are 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1979, 1987, and 1993. Each entry was independently checked, approximating 800,000 cells. Entry into separate Excel spreadsheets was followed by conversion into a master SAS dataset for statistical tests. Arbitron's television operation went out of business in 1993/94 and 1994 data are apparently unavailable.

The Arbitron Television Market Report contains a wide array of data on station programming and program popularity by demographic groups For the purposes of this analysis, several of the many possible data items were selected from the reports. The selected data items are:

- ADI name: An ADI is defined by Arbitron as "An exclusive geographic area consisting of all counties in which the home-market commercial stations and satellite stations reported in combination with them received the greatest percentage of total viewing hours." An ADI usually consists of a central city